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## Ecological Notes on *Reithrodontomys megalotis* in Illinois

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The western harvest mouse, *Reithrodontomys megalotis* ( Baird ) , has been reported from Illinois on three occasions : Hoffmeister and Warnock (1955 :161) reported it from Mt. Carroll in Carroll County, Klimstra (1957 :522) captured several specimens near Denrock in Whiteside County, and Stains and Stuckey (1960 :131) took two specimens near Bradford in Stark County. There is little information on the life history of the species in Illinois (Hoffmeister and Mohr, 1957 : 157) and some question as to the race to which Illinois specimens should be assigned (Klimstra, 1957 :523) . Hall and Kelson (1959 :586-587) consider harvest mice from Illinois to be *R. m. dychei*.

In northwestern Illinois, trapping operations between December 2, 1957, and February 26, 1959, yielded 25 western harvest mice and 1,291 specimens of other species (Table 1) . Standardized traplines, consisting of 20 stations with two break-back traps per station and ten paces between stations, were set along secondary road and railroad rights-of-way. The traps, baited with liver sausage, chiefly to attract shrews, were allowed to remain in place for two consecutive nights, and were examined each morning. By county, one hundred and fifty-five traplines were set as follows : Henry (2) , Winnebago (1) , Stephenson (5) , Ogle (5) , Lee (5) , Rock Island (7) , Jo Daviess (20) , Whiteside (25) , and Carroll (85) . The general area in which traplines were operated is shown in Fig. 1. The number of traplines set, traplines successful in capturing *Reithrodontomys*, and the number of specimens taken is shown by month in Table 2.

Nine study skins and skulls, seven skulls, and one alcohol specimen

Sixteen traplines were successful in capturing harvest mice. Three traplines captured three each, three captured two each, and the remain-

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ing ten each captured a single specimen. Harvest mice were taken in the following locations :

CARROLL COUNTY:

NW $\frac{1}{4}$ SE $\frac{1}{4}$  sec. 9, T. 23 N., R. 4 E.; NE $\frac{1}{4}$ SE $\frac{1}{4}$  sec. 28, T. 23 N., R. 4 E.; SE $\frac{1}{4}$ SE $\frac{1}{4}$  sec. 25, T. 23 N., R. 4 E.; NE $\frac{1}{4}$ NW $\frac{1}{4}$  sec. 12, T. 23 N., R. 3 E.; SW $\frac{1}{4}$ NE $\frac{1}{4}$  sec. 24, T. 23 N., R. 3 E.; SW $\frac{1}{4}$ NW $\frac{1}{4}$  sec. 24, T. 24 N., R. 4 E.; SW $\frac{1}{4}$ SW $\frac{1}{4}$  sec. 20, T. 23 N., R. 4 E.; NE $\frac{1}{4}$ NW $\frac{1}{4}$  sec. 21, T. 24 N., R. 6 E.; NE $\frac{1}{4}$ SW $\frac{1}{4}$  sec. 10, T. 25 N., R. 5 E.

WHITESIDE COUNTY:

SW $\frac{1}{4}$ SE $\frac{1}{4}$  sec. 15, T. 20 N., R. 7 E.; NE $\frac{1}{4}$ SE $\frac{1}{4}$  sec. 22, T. 21 N., R. 5 E.; SE $\frac{1}{4}$ NW $\frac{1}{4}$  sec. 15, T. 22 N., R. 5 E.

Jo DAVIESS COUNTY:

SW $\frac{1}{4}$ NW $\frac{1}{4}$  sec. 28, T. 26 N., R. 3 E.; SW $\frac{1}{4}$ NW $\frac{1}{4}$  sec. 15, T. 27 N., R. 3 E.; SW $\frac{1}{4}$ NW $\frac{1}{4}$  sec. 34, T. 29 N., R. 1 W.

STEPHENSON COUNTY:

NE $\frac{1}{4}$ SE $\frac{1}{4}$  sec. 16, T. 28 N., R. 7 E.

Habitats in which harvest mice were most frequently collected consisted of grasses, with scattered clumps of tall-stemmed herbs, and small shrubs. Common grasses were bluegrass, *Poa* spp., and little bluestem, *Andropogon scoparius*, with an occasional tuft of fescue, *Festuca* spp., oats, *Avena sativa*, panic grass, *Panicum* spp., and/or bristle grass, *Setaria* spp. Usually two or more of the following tall-stemmed herbs were scattered among the grasses : giant ragweed, *Ambrosia trifida*, aster, *Aster* spp., goldenrod, *Solidago* spp., and white sweetclover, *Melilotus alba*. Shrubs and brambles such as elderberry, *Sambucus* spp., wild cherry and wild plum, *Prunus* spp., hawthorn, *Crataegus* spp., wild grape, *Vitis* spp., and blackberries, *Rubus* spp., as well as small oaks, *Quercus* spp., maples, *Acer* spp., and willows, *Salix* spp., were common. Two habitats in which harvest mice were taken consisted of almost pure stands of little bluestem.

It became evident in the course of trapping that only a few of the habitats seemingly suitable to harvest mice were occupied by them. One of the factors which may have limited harvest mice was the amount of brushy vegetation. *Peromyscus maniculatus bairdii* and *Microtus pennsylvanicus*, two species which are relatively intolerant of brushy cover, were more frequently captured on traplines that caught *Reithrodontomys* than on those that did not (Table 1) . An average of 6.6 *P. in. bairdii* and 6.3 *M. pennsylvanicus* per hundred traps were taken on lines which caught harvest mice and only 4.3 and 3.7 respectively on those that did not. *Peromyscus leucopus*, commonly associated with woodland and brushland habitats, was taken less frequently in areas where harvest mice were caught. There were only 2.5 per hundred traps on traplines which

TABLE 1. Species and numbers of small mammals captured by the traplines successful and traplines unsuccessful in capturing *Reithrodontomys* in northwestern Illinois, December 2, 1957—February 26, 1959.

SPECIES	Traplines successful taking <i>Reithrodontomys</i>			Traplines unsuccessful taking <i>Reithrodontomys</i>		
	Number captured (16 successful traplines, 640 traps)	Number per 100 traps	Per cent of total captures	Number captured (139 unsuccessful traplines, 5,560 traps)	Number per 100 traps	Per cent of total captures
<i>Reithrodontomys megalotis</i>	25	3.9	14.8	0	0	0
<i>Peromyscus maniculatus</i>	42	6.6	24.9	240	4.3	20.9
<i>Peromyscus leucopus</i>	16	2.5	9.5	317	5.7	27.6
<i>Microtus pennsylvanicus</i>	40	6.3	23.7	204	3.7	18.1
<i>Microtus ochrogaster</i>	10	1.6	5.9	73	1.3	6.3
<i>Blarina brevicauda</i>	22	3.5	13.0	219	3.9	19.1
<i>Sorex cinereus</i>	4	0.6	2.4	39	0.7	3.4
<i>Mus musculus</i>	8	1.2	4.7	30	0.5	2.6
<i>Citellus tridecemlineatus</i>	0	—	—	12	0.2	1.0
<i>Zapus hudsonicus</i>	2	0.3	1.1	4	0.1	0.3
<i>Cryptotis parva</i>	0	—	—	6	0.1	0.5
<i>Mustela rixosa</i>	0	—	—	2	*	0.1
<i>Rattus norvegicus</i>	0	—	—	1	*	0.1
TOTALS	169	26.4	100	1,147	20.6	100

\*Very small numbers, not calculated.

caught harvest mice and 5.7 on those that did not. Nevertheless *Reithrodontomys* can tolerate a certain amount of brushy vegetation and possibly prefers areas with small amounts of brush. *Microtus ochrogaster* and *Blarina brevicauda* were caught in about equal numbers per hundred traps on lines that did and did not catch harvest mice.

A female harvest mouse trapped on March 28, 1958, contained six embryos 13 mm. long. Another taken on June 19, 1958, contained two embryos 8 mm. long and two which were partially resorbed. A female collected on April 10, 1958, appeared to be in oestrus. Four placental scars were evident in a female captured on May 16, 1958. No specimens

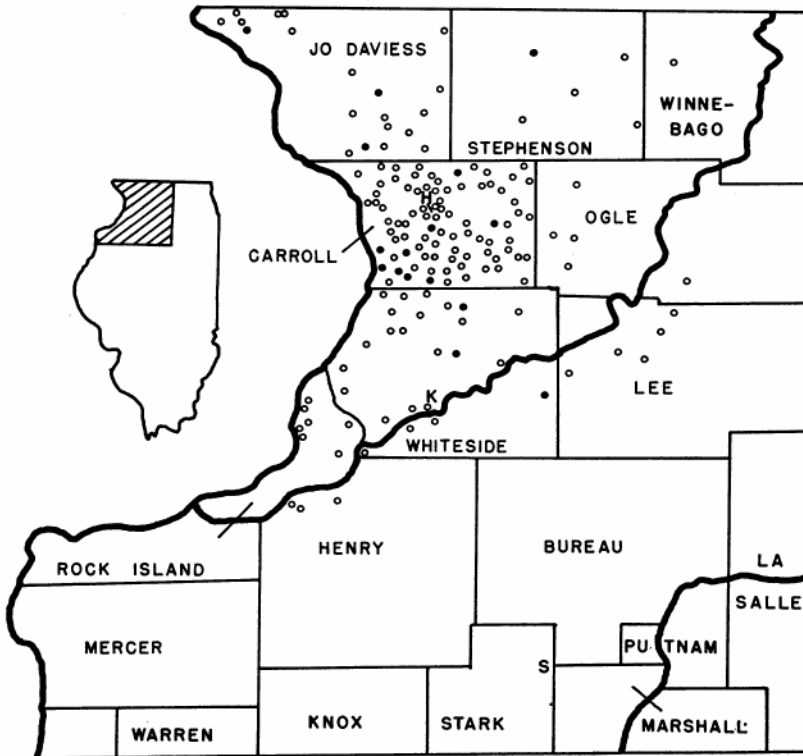


FIGURE 1. The locations of traplines for small mammals in northwestern Illinois, December 2, 1957 - February 26, 1959. Solid symbols indicate locations at which *Reithrodontomys* were captured. Locations of specimens reported by Hoffmeister and Warnock (1955), Klimstra (1957), and Stains and Stuckey (in press), are indicated by "H", "K", and "S", respectively. (1960), are indicated by "H", "K", and "S", respectively.

were collected between June 19, 1958, and December 23, 1958. It was apparent, however, that reproductive activity began about the middle of March and lasted until at least the last of June.

TABLE 2. Seasonal distribution of traplines for small mammals in northwestern Illinois, December 2, 1957 — February 26, 1959.

Month	Number of traplines operated	Number of traplines successful in taking <i>Reithrodontomys</i>	Number of <i>Reithrodontomys</i> captured
January	14	0	—
February	48	7	12
March	18	3	3
April	18	1	1
May	18	3	6
June	10	1	1
July	3	0	—
August	4	0	—
September	0	—	—
October	3	0	—
November	0	—	—
December	19	1	2
TOTALS	155	16	25

Klimstra (1957:523) stated that specimens from Whiteside County, Illinois, were somewhat smaller than those taken elsewhere, even smaller than those taken by Hoffmeister and Warnock (1955:162) 30 miles north in Carroll County. Of the specimens on which this report is based, those taken in Whiteside County and the southern one-third of Carroll County were slightly smaller than those of the same age and sex captured in the northern two-thirds of Carroll County and in Jo Daviess and Stephenson Counties (Table 3). The numbers examined, however, were insufficient to determine whether these differences were statistically significant. The measurements are near the lower limits listed by Hall (1955:127) for Kansas specimens of *R. megalotis*.

TABLE 3. Mean weights and measurements of *Reithrodontomys* taken in the southern one-third of Carroll County and Whiteside County, and in the northern two-thirds of Carroll County, and Jo Daviess and Stephenson Counties, Illinois, December 2, 1957—February 26, 1959.

SPECIMEN CATEGORY	Number examined	Mean weights (in gms.)	Mean measurements (in mm.)			
			Total length	Tail length	Hind foot length	Ear from notch
Northern adult males	5	8.8	123.6	58.0	15.8	13.7
Southern adult males	5	7.6	118.4	55.6	16.8	12.6
Northern adult non-pregnant females	4	10.3	134.0	64.7	16.3	14.0
Southern adult non-pregnant females	4	8.9	122.7	57.0	16.0	13.5

All specimens were thoroughly examined for fleas (Siphonaptera), but only two were infested. A single female *Monopsyllus wagneri systaltus* (Jordan) was found on a harvest mouse caught on May 10, 1958. Four lice (Anoplura) taken from this same specimen were identified as *Hoplopleura hesperomydis* (Osborn). Two fleas, a male and female *Orchopeas leucopus* (Baker), were found on a specimen captured on May 16, 1958.

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